

April 23, 2003

Mr. Thomas Stinson  
Carpenter Company  
P.O. Box 2386  
Elkhart, Indiana 46515

Re: 039-17257-00086  
First Administrative Amendment to  
Part 70 039-6059-00086

Dear Mr. Stinson:

Carpenter Company, located at 195 County Road, Elkhart, Indiana was issued a Part 70 permit on June 11, 1999 for a stationary source that manufactures soft block foam, chemical blending for customers and cushion blocks. A letter requesting a change in the permit was received on February 20, 2003 to incorporate the following equipment which is an insignificant activity with Particulate Matter uncontrolled PTE of 3.37 tons per year (see attached detailed emission calculations). Therefore, the change qualifies as an administrative amendment pursuant to 326 IAC 2-7-11. Amendment is as follows:

- (a) One (1) Non-Woven Fiber Line with a capacity of 2500 pounds per hour. This line mechanically processes purchased fibers to produce a fiber web. These fibers are specially designed to soften at a certain temperature to "thermo bond" the fibers together which is accomplished by running the "crossed lapped" batt through 6.0 million British thermal units per hour (mmBtu/hr) natural gas fired oven.

The following condition shall be applicable:

- (1) Pursuant to 326 IAC 6-3-2, the PM emissions from the Non-Woven Fiber Line shall not exceed 4.76 pound per hour at a process weight rate of 2,500 pounds per hour. This allowable shall be determined using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where:

E = rate of emission in pounds per hour; and  
P = process weight rate in tons per hour

Changes to the Part 70 are as follows (changes are **bolded** and deletions are ~~struck through~~ for emphasis):

- (1) Section A.3 will be amended to include the proposed Non-Woven Fiber Line as follows:

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]  
[326 IAC 2-7-5(15)]

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This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million Btu/hr:  
  
One (1) boiler, fueled by natural gas, rated at 8.36 MMBtu per hour, exhausting to a stack.
- (b) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.
- (c) **One (1) Non-Woven Fiber Line with a capacity of 2500 pounds per hour. This line mechanically processes purchased fibers to produce a fiber web. These fibers are specially designed to soften at a certain temperature to “thermo bond” the fibers together which is accomplished by running the “crossed lapped” batt through 6.0 million British thermal units per hour (mmBtu/hr) natural gas fired oven.**

(2) The following Section D.10 will be added in the Part 70 permit as follows:

**SECTION D.10 FACILITY OPERATION CONDITIONS**

**Facility Description [326 IAC 2-7-5(15)] - Insignificant:**

- (a) **One (1) Non-Woven Fiber Line with a capacity of 2500 pounds per hour. This line mechanically processes purchased fibers to produce a fiber web. These fibers are specially designed to soften at a certain temperature to “thermo bond” the fibers together which is accomplished by running the “crossed lapped” batt through 6.0 million British thermal units per hour (mmBtu/hr) natural gas fired oven.**

**(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions).**

**Emission Limitation and Standards [ 326 IAC 2-7-5(1)]**

**D.10.1 PM emissions [326 IAC 6-3-2]**

**Pursuant to 326 IAC 6-3-2, the PM emissions from the Non-Woven Fiber Line shall not exceed 4.76 pound per hour at a process weight rate of 2,500 pounds per hour. This allowable shall be determined using the following equation:**

**Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:**

$$E = 4.10 P^{0.67}$$

**where:**

**E = rate of emission in pounds per hour; and  
P = process weight rate in tons per hour**

All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this amendment and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.  
If you have any questions on this matter, please contact Aida De Guzman, at (800) 451-6027, press 0  
and ask for Aida De Guzman or extension (3-4972), or dial (317) 233-4972.

Sincerely,

Original signed by Paul Dubenetzky  
Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

Attachments

APD

cc: File - Elkhart County  
U.S. EPA, Region V  
Elkhart County Health Department  
Northern Regional Office  
Air Compliance Section Inspector - Paul Karkiewicz  
Compliance Data Section - Karen Nowak  
Administrative and Development  
Technical Support and Modeling - Michele Boner

# **PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY**

**Carpenter Co.  
195 County Road 15 South  
Elkhart, Indiana 46515**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 and 326 IAC 2-1-3.2 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T039-6059-00086	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: June 11, 1999  Expiration Date: June 11, 2004

First Significant Permit Modification 039-14225, issued on August 14, 2001  
First Administrative Amendment 039-15274, issued on March 5, 2002

Second Administrative Amendment 039-17257	Affected: 8, 44
Issued by:Original signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: April 23, 2003

C32	11,500	8	30.5	538	BPOLYOL	0	10,000
C33	11,500	8	30.5	174	A-PP	0	500,000
C34	11,500	8	30.5	2000	BPOLYOL	0	500,000
C35	11,500	8	30.5	538	BPOLYOL	0	Future polyol
C36	11,500	8	30.5	538	BPOLYOL	0	Future polyol
C37	28,500	12	34	360	MDI	0	150,000
C38**	12,000	9	41	120.8	ABA	0	10,000

Notes: \* Emission control device: conservation vent (CV), Nitrogen blanket (N2), or carbon absorption bed filters (CA)  
\*\* Closed system

Facility Description [326 IAC 2-7-5(15)] : Rebond tanks EU-4

Fixed Roof Cone Storage Tanks	Storage Capacity (gallons)	Diameter (feet)	Height (feet)	Vapor MW	Containing	VP (mmHg)	Annual Throughput gallons
R1	6,500	8	17.3	174	ISO-PP	0.01	500,000***
R2	4,000	8	10	174	ISO-PP	0.01	500,000***

Notes: \* Emission control device, CV, N2, or CA  
\*\* Closed System  
ISO-PP - Isocyanate Prepolymer  
\*\*\* R1 and R2 cascade from one tank to the next for a TOTAL throughput of 500,000 gallons. These tanks are vented through only one (1) vent.

Facility Description [326 IAC 2-7-5(15)] : Mold Tanks EU-05

Fixed Roof Cone Storage Tanks	Storage Capacity (gallons)	Diameter (feet)	Height (feet)	Vapor MW	Containing	VP (mmHg)	Annual Throughput gallons
MLD 1	8,200	10	14	195	B POLY	0.01	131,549
MLD2	8,200	10	14	5000	BPOLY	0	323,546
MLD3	8,200	10	14	5000	ISO	0	310,408

Notes: \* Emission control device, CV, N2, or CA  
\*\* Closed System

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]  
[326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million Btu/hr:  
One (1) boiler, fueled by natural gas, rated at 8.36 MMBtu per hour, exhausting to a stack.
- (b) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.
- (c) One (1) Non-Woven Fiber Line with a capacity of 2500 pounds per hour. This line mechanically processes purchased fibers to produce a fiber web. These fibers are specially designed to soften at a certain temperature to "thermo bond" the fibers together which is accomplished by running the "crossed lapped" batt through 6.0 million British thermal units per hour (mmBtu/hr) natural gas fired oven.

## SECTION D.10

## FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Insignificant Activity:

- (a) One (1) Non-Woven Fiber Line with a capacity of 2500 pounds per hour. This line mechanically processes purchased fibers to produce a fiber web. These fibers are specially designed to soften at a certain temperature to “thermo bond” the fibers together which is accomplished by running the “crossed lapped” batt through 6.0 million British thermal units per hour (mmBtu/hr) natural gas fired oven.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitation and Standards [ 326 IAC 2-7-5(1)]

#### D.10.1 PM emissions [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the PM emissions from the Non-Woven Fiber Line shall not exceed 4.76 pound per hour at a process weight rate of 2,500 pounds per hour. This allowable shall be determined using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where:

E = rate of emission in pounds per hour; and  
P = process weight rate in tons per hour

**Source Name:** Carpenter Company  
**Source Address:** 195 County Road 15, Elkhart, Indiana 46515  
**Mailing Address:** P. O. Box 2386, Elkhart, Indiana 46515  
**Operating Permit:** TV039-6059-00086  
**Issuance Date:** June 11, 1999  
**2<sup>nd</sup> Administrative Amendment:** 039-17257  
**Reviewer:** Aida De Guzman

The source proposes to install the following equipment, which is an insignificant activity with PM emissions of less than 25 pounds per day:

- (a) One (1) Non-Woven Fiber Line with a capacity of 2500 pounds per hour. This line mechanically processes purchased fibers to produce a fiber web. These fibers are specially designed to soften at a certain temperature to "thermo bond" the fibers together which is accomplished by running the "crossed lapped" batt through 6.0 million British thermal units per hour (mmBtu/hr) natural gas fired oven. A baghouse will be installed to control the PM emissions.

#### Emission Calculations:

- (a) Non-Woven Fiber Line -

- (1) VOC Emissions:

Plastic melting process involved in a typical plastic extrusion operation uses an Emission Factor of 1 lb of VOC/ton. This emission factor is not applicable to the proposed Non-Woven Fiber Line since the thermo bonding process involved from this line does not reach a temperature that melts the polystyrene fiber. Therefore, no VOC is flash off from this process.

- (2) PM Emission:

The calculation was based on a stack test done on a similar process line at Fogelsville Facility that Carpenter Company operates.

Carpenter Company (Fogelsville Facility) Stack Tests Result		Carpenter Company Proposed Fiber Line
Run Time, Minute	90	60
Pounds of Matted Fiber Produced on the Run Time	2688	2500
Production Rate (lbs/hr)	1792	2500
Dust Collected During Production Run	1.83	1.74
Pounds Dust Generated During Production Run	1.87	1.77
Filter Efficiency	98%	98%
Pounds of Dust Generated Per Hour (lbs/hr)	1.24	1.77

Lb Dust Generated/lb Mat'l Produced	0.00069 or 0.069%	0.000695 or 0.069%
% PM <100 Microns	43.4*	43.4*
Uncontrolled PM Potential to Emit (PTE), tons/yr	2.37	3.37
Controlled PM Potential to Emit, tons/yr	0.047	0.067

Note: \* Determined through a sieve analysis.

**Methodology:**

Production Rate, lbs/hr = Pounds of Matted Fiber/Run time, min. \* 60min/hr  
Pounds Dust Generated = Dust Collected/0.98  
During Production Run  
Dust Generated, lbs/hr = Dust collected during prod. run/run time, min \* 60 min/hr  
Uncontrolled PM PTE, tons/yr = Dust generated, lbs/hr \* 8760 hrs/yr \* tons/2000 lb \* 43.4%  
Controlled PM PTE, tons/yr = Uncontrolled PM PTE \* (0.98)

(b) 6.0 mmBtu/hr natural gas-fired oven -

6.0 mmBtu/hr						
Emission Factor (lb/MMCF)	PM (1.9)	PM10 (7.6)	SO2 (0.6)	NOx (100)	VOC (5.5)	CO (84)
PTE (tons/yr)	0.0	0.2	0.0	2.6	0.1	2.2

**Methodology:**

MMCF = 1,000,000 CF of gas  
MMBtu = 1,000,000 Btu

Potential Throughput, MMCF/yr = Heat input, mmBtu/hr \* 8760 hrs/yr \* MMCF/1000 MMBtu  
PTE, tons/yr = Throughput, MMCF/yr \* Ef, lb/MMCF \* ton/2000 lbs

**Rule Applicability:**

(a) 326 IAC 6-3-2 (Particulate Emission Limitation)  
The new Non-Woven Fiber Line is subject to this rule, which mandates a PM emission using the following equation:

$$\begin{aligned}
 E &= 4.10 P^{0.67} \\
 &= 4.10 (2,500/2000)^{0.67} \\
 &= 4.76 \text{ lbs/hr this line is in compliance as its PTE is less than the allowable.}
 \end{aligned}$$